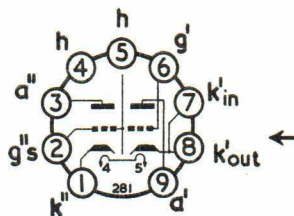


R.F. CASCODE DOUBLE TRIODE



B9A Base

GENERAL

This is an R.F. Double Triode on a B9A base having separate cathodes and shielded sections for use as a Cascode R.F. Amplifier in AC/DC television receivers.

Heater Current	I_h	0.3	A
Heater Voltage	V_h	7	V

RATINGS

Maximum Anode Dissipation (either section)	$P_a(\max)$	2	W
Maximum Anode Voltage	$V_a(\max)$	250	V
Maximum Grid Voltage (Negative)	$V_g(\max)$	-50	V
Maximum Heater to Cathode Voltage (Section 1)	$V_{h-k'}(\max)$	90*	V ←
Maximum Heater to Cathode Voltage (Heater positive) Section 2	$V_{h-k''}(\max)$	90*	V ←
Maximum Peak Heater to Cathode Voltage (Heater negative) Section 2		250*†	V ←
Maximum Cathode Current per section	$I_k(\max)$	16	mA
Maximum Grid to Cathode Resistance (Section 1)	$R_{g'-k'}(\max)$	500	kΩ
Maximum Grid to Cathode Resistance (Section 2)		22‡	kΩ
Maximum Effective Grid to Earth Resistance (Section 2)		150§	kΩ

* Measured with respect to the higher potential heater pin

† Maximum DC component=180V.

‡ Grid current bias.

§ With potentiometer bias from H.T. line

INTER-ELECTRODE CAPACITANCES

	ϕ	††	**	
Grid' to Cathode', Heater, Shield	$c_{g'-k'}, h, s$	3.0	3.3	4.3 pF
Anode' to Grid'', Shield, Heater, Cathode'	$c_{a'-g' }, s, h, k'$	3.3	3.6	4.6 pF
Anode' to Cathode', Heater, Shield	$c_{a'-k' }, h, s$	1.7	1.9	2.9 pF
Cathode'' to Grid'', Shield, Heater, Cathode'	$c_{k''-g' }, s, h, k'$	5.3	5.6	6.4 pF
Anode' to Grid''	$c_{a'-g''}$	1.5	1.5	1.5 pF
Anode'' to Cathode''	$c_{a''-k''}$	0.17	0.19	0.21 pF
Anode' to Anode''	$c_{a'-a''}$	0.007	0.011	0.013 pF
Grid' to Anode''	$c_{g'-a''}$	0.0035	0.0065	0.010 pF

ϕ In fully shielded socket, with cylindrical screening can.

†† With holder capacity balance out but with cylindrical screening can.

** Total capacity including B9A holder with cylindrical screening can. (Plessey holder type CP180024/3)

Indicates a change ←

CHARACTERISTICS (Each section)

Anode Voltage	V_a	90	V
Anode Current	I_a	15	mA
Grid Voltage	V_g	-1.2	V
Mutual Conductance	g_m	9	mA/V
Amplification Factor	μ	27	←

TYPICAL CASCODE OPERATION

		Circuit	Circuit	
		††	‡‡	
H.T. Supply Voltage	V_b	200	200	V
Anode Decoupling Resistor, Section 2		2.2	3.3	k Ω
Anode Current	I_a	15.3	14.8	mA
Grid Bias Voltage, Section 1 (Supplied by Cathode Resistor)		-1.53	-1.2	V
Self Bias Resistor, Section 1	$R_{k'}$	100	82	Ω
Combined Mutual Conductance ($\Delta I_a / \Delta V_{g1}$)		8.5	8.6	mA/V
Approximate A.G.C. Voltage to give Combined Mutual Conductance of 0.1 mA/V		-7	-12	V
Input Capacitance (Working)	$c_{in(w)}$	5.2*	5.2*	pF ←
Change in Input Capacitance by biasing valve to cut off	$\Delta c_{in(w)}$	1.2	1.2	pF ←
Input Resistance at 50 Mc/s (Anode short circuit)		28		k Ω ←
Input Resistance at 200 Mc/s (Anode short circuit)		1.1		k Ω ←

†† With potentiometer bias from the HT line for valve section 2.

‡‡ With grid current bias for valve section 2.

* With holder capacitance balanced out but with cylindrical screening can.

MOUNTING POSITION—Unrestricted.

APPROXIMATE WEIGHT

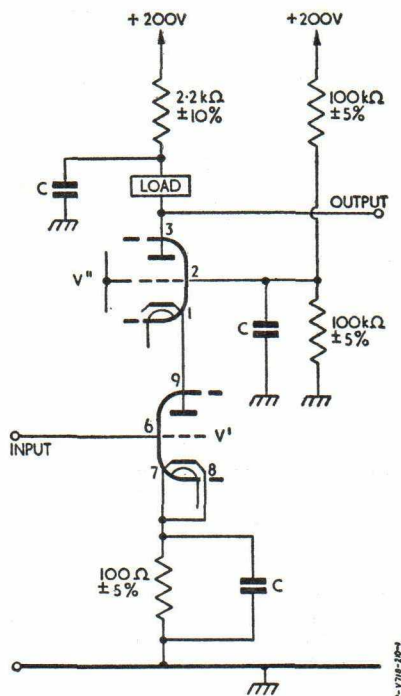
Net	0.5	oz
Packed	0.75	oz

Indicates a change ←

TYPICAL CASCODE BIAS CIRCUITS

Circuit 1

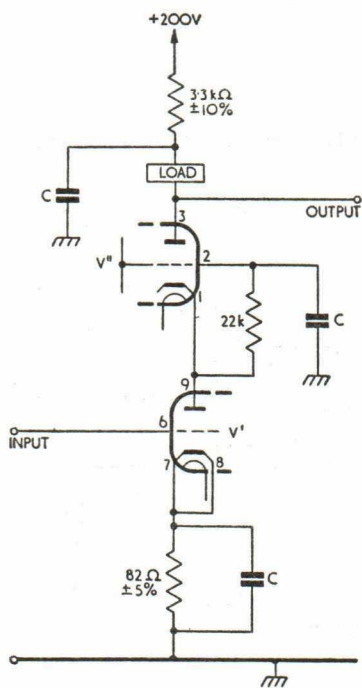
Valve section 2, Potentiometer Bias arrangement.



C = DECOUPLING CONDENSERS

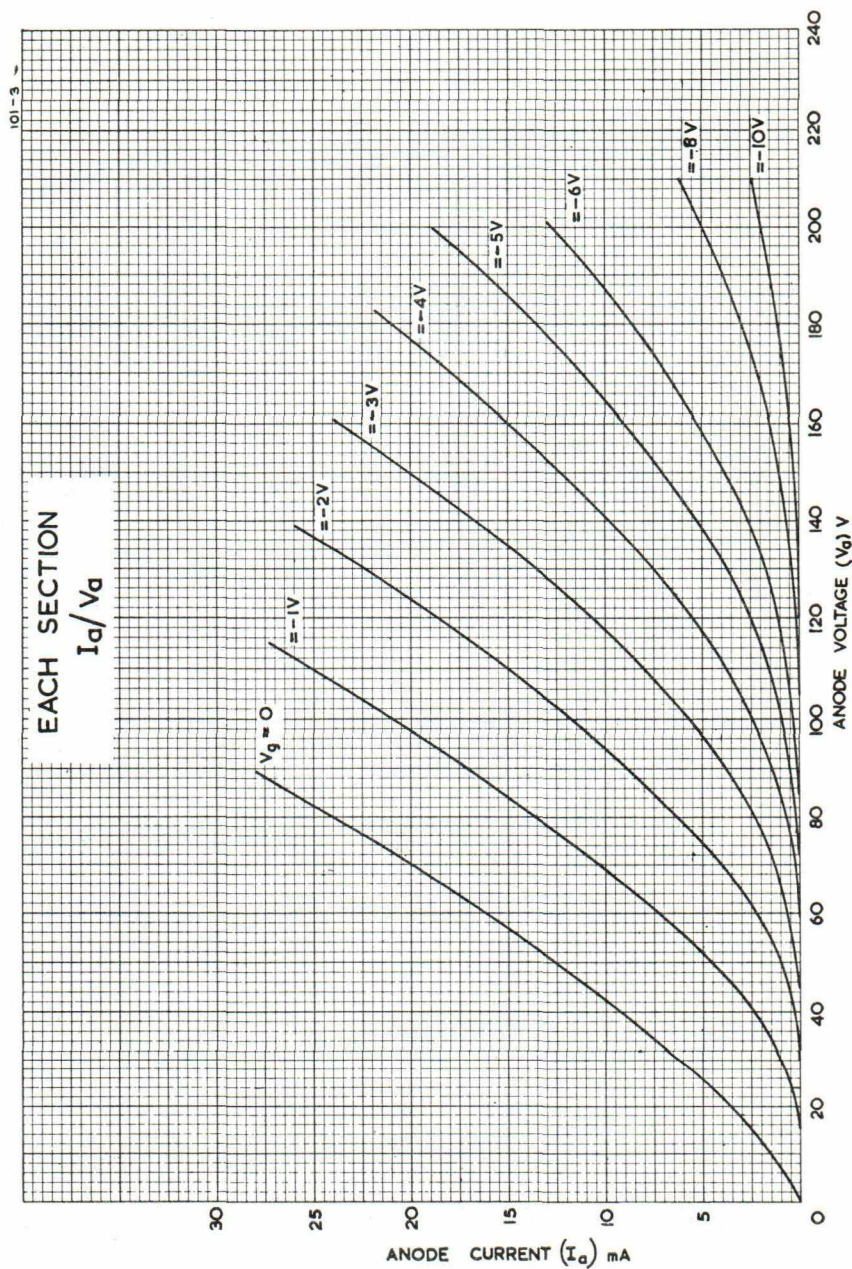
Circuit 2

Valve section 2, Grid Current Bias arrangement.



C=DECOUPLING CONDENSERS

NOTE : Application of bias to section 1 in the Potentiometer Bias arrangement effectively controls both triodes giving this combination a shorter grid base than the Grid Current Bias arrangement.



30L15
PCC805

VALVES

MAZDA

